CIZEK, Karel

Beer clarification by centrifuging. Kvasny prum 9 no.2:39-40 F '63.

1. Vychodoceske pivovary, n.p., Hradec Kralove.

KORACH, E.; CIZEK, K.

Our experiences with enzymatic zonulolysis. Cesk. oftal. 19 no.3:197-199 My '63.

1. Ocne oddelenie Vojenskej nemocnice v Kosiciach a ocne oddelenie polikliniky I OUNZ v Kosiciach.
(ENZYMATIC ZONULOLYSIS) (CHYMOTRYPSIN)

KORACH, E.; CIZEK, K.

A ventilation apparatus in ophthalmic surgery under local anesthesia. Cesk. oftal. 19 no.3:200-202 My '63.

1. Oene oddelenie Vojenskej nemocnice v Kosiciach a ocne oddelenie poliklinika I OUNZ v Kosiciach.
(ANESTHESIA, LOCAL) (RESPIRATION)
(OPHTHALMOLOGY) (SURGICAL EQUIPMENT)

CIZEK, K.

Construction of fermentation cellars. Kvasny prum 10 no. 3: 66-67 Mr '64.

1. Vychodoceske pivovary National Enterprise, Hradec Kralove.

CIZEK, Leopold

New technique of cotton spinning. Tech praca 15 no.3:186-189 Mr '63.

1. Vyzkumny ustav bavlnarsky, Usti nad Orlici.

CIZEK, Ludvik, dr., inz.

"Wooden roof and hall constructions" by A.Gattnar and F.Trysna. Reviewed by Ludvik Cizek. Drevo 17 no.6:196 Je '62.

CIZEK, L.

Effect of some factors on stress relaxation in metals at high temperatures. p. 335. (Hutnicke Listy, Vol. 12, No. 4, Apr. 1957, Brno, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 8, Aug 1957. Uncl.

CIZEK, L.

Relation between creep behavior and relaxation.

P. 1115. (HUTNICKE LISTY.) (Brno, Czechoslavakia) Vol. 12, No. 12, Dec. 1957

SO: Monthly Index of East European Accession (EEAI) LC. Vol. 7, No. 5, May 1958

CIZEK, L. ; VODSEDALEK, J.

"Poldi AKRN austenitic heat-resistant steel." p. 439.

STROJIRENSTVI. (MINISTERSTVO TEZKEHO STROJIRENSTVI, MINISTERSTVO PRESNEHO STROJIRENSTVI A MINISTERSTVO AUTOMOBILOVEHO PRUMYSLU A ZEMEDELSKYCH STROJU.) Praha, Czechoslovakia, Vol. 9, no. 6, June 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 9, September 1959. Uncl.

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AUTHOR: Čížek, L., Engineer CZECH/34-59-12-23/44

TITLE: Influence of Heat Treatment on the Mechanical Properties and the Creep Rupture Strength of the Austenitic Steel 15Cr35NiWTi Which can be Hardened by Precipitation

PERIODICAL: Hutnické listy, 1959, Nr 12, pp 1115-1118

ABSTRACT: Paper presented at the "Symposium on Problems of Development of Creep-Resisting Materials", Mariánské Lázně, September 11-13, 1959. Section III. The here described experiments were carried out on specimens from a commercial 5 ton melt of the following chemical composition: 0.09% C, 1.30% Mn, 0.43% Si, 0.013% P, 0.008% S, 36.81% Ni, 15.61% Cr, 2.19% W, 2.15% Ti, 0.52% Al and 0.005% N. The structure of the steel was similar to that of Nimonic 80. It was found that the optimum solution annealing temperature from the point of view of creep strength is in the neighbourhood of 1150°C; the fatigue limit drops with increasing solution annealing temperature and therefore as a suitable compromise an annealing temperature of 1130°C is recommended; if the requirement for a higher fatigue

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CZECH/34-59-12-23/44

Influence of Heat Treatment on the Mechanical Properties and the Creep Rupture Strength of the Austenitic Steel 15Cr35NiWTi Which can be Hardened by Precipitation

strength is predominant, the annealing temperature can be somewhat lower still. The creep strength values are also greatly affected by the speed of cooling after solution annealing. The precipitation hardening is greatly influenced by the Ti content; the lower the Ti content the lower must be the temperature and the longer the period of precipitation hardening; two-stage precipitation treatment did not produce better mechanical properties than single-stage treatment.
There are 17 figures, 1 table and 11 references, 2 of which are Czech, 2 Soviet and 7 English.

ASSOCIATION: Státní výzkumný ústav materiálu a technologie, Praha (State Research Institute for Materials and Technology, Prague)

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Z/034/61/000/009/001/002
E073/E535

AUTHORS: Čížek, Lubomír, Candidate of Science Engineer, Ježek, Jaroslav, Doctor of Natural Sciences and Vobořil, Josef, Engineer

TITLE: Influence of structural changes on the mechanical properties of hardenable creep resisting 35Ni-15Cr-3W-Ti,Al steel

PERIODICAL: Hutnické listy, 1961, No.9, pp.637-645

TEXT: The properties of the steel Poldi AKRN were discussed in earlier work (Ref.1: J. Vodsed'álek and L. Čížek, Strojírenství 9 (1959) No.6, p.439), where it was stated that, due to its excellent anti-creep and relaxation properties, it is suitable for extensive use for machine parts operating at 650 to 675°C and up to 700°C for less mechanically stressed components. The development of this steel has reached a stage when it can be used for blades of steam turbines. Due to its exceptionally high resistance to relaxation, it is one of the best steels for bolts. In later work (Ref.2: L.Čížek: Candidate dissertation, SVÚMT,Prague and Ref.3: J. Vobořil: Candidate dissertation, SVÚMT, Prague)

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Influence of structural changes ... Z/034/61/000/009/001/002
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attention was paid to structural changes which occur in this material during heat treatment and in operation. The composition of the steel is 35% Ni, 15% Cr and 3% W; hardenability is achieved by adding about 1.5% Ti and also Al. Equilibrium diagrams for this type of steel are not available. The structural conditions in this steel can be judged only on the basis of simplified ternary diagrams Ni-Cr-Ti, Ni-Cr-Al, Ni-Ti-Al and pseudo-ternary diagrams Ni-Cr-Ti-Al plotted by Taylor and Floyd for Nimonic type alloys. The steel under consideration differs from these alloys inasmuch as a part of the chromium and a larger part of the nickel is substituted by iron with a small quantity of W. It could be anticipated that for the steel AKRN the structural relations are similar to those pertaining to Ni-Cr-Ti-Al Nimonic type alloys. This means that, in addition to the γ-solid solution matrix, the phase γ' with the basic composition Ni_3Al with a face-centered cubic lattice may be present, the parameter of which differs only slightly from that of the γ-solid solution. This phase is capable of dissolving titanium and about 3/5ths of the Al atoms can be substituted by Ti atoms. This substitution increases the

difference between the lattice parameters of the γ' and the γ phases, which has a favourable influence on the resistance to creep of the alloy after hardening. It was found that the longest time to fracture is obtained for specimens subjected to solution annealing at 1150°C for two hours. After rapid cooling from this temperature, a saturated γ-solid solution is obtained which contains TiC carbides that did not dissolve during the annealing. The steel has a low hardness, strength and yield point and a high elongation, contraction and impact strength. The second stage of heat treatment is precipitation annealing, during which considerable changes occur in the hardness, depending on the temperature and duration of this annealing. Fig.1 shows the hardening curves of a heat containing 2.15% Ti (hardness H_B vs. annealing time, hours); the solution annealing was effected at 1150°C for two hours, followed by quenching in water. The maximum hardness for this heat was 320 H_B. Fig.2 shows the hardening curves of alloys with various titanium contents after a precipitation hardening time of 10 hours (hardness H_B vs. temperature, °C; solution annealing same as for Fig.1). Fig.3

shows the strength and yield point of a heat with 2.15% Ti (σ_{kt}, σ_{pt}, kg/mm^2 vs. annealing time, hours; solution annealing same as in previous figures). It can be seen that as a result of the precipitation hardening the hardness increases from 62 to 108 kg/mm^2 and the yield point from 25 to 70 kg/mm^2. The maxima roughly correspond to the maxima of the hardness curves. The elongation and contraction decrease in accordance with increasing strength. Over-ageing, which occurs after 100 hours at 700°C, is characterized by the yield point not decreasing further and the contraction increasing . The position is similar for ageing at 800°C. The impact strength decreases at all temperatures from the very beginning of the precipitation annealing and its initial decrease will be the higher the higher the annealing temperature. This decrease shows that there are local reactions at the grain boundaries. Detailed information is given on the structural changes after precipitation hardening. The individual phases were investigated by X-ray analysis using monochromatic CrKα radiation. Analysis of the finest phases were made with electron diffraction methods on particles caught on the extraction replicas.

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In some cases electron diffraction analysis of fine particles was carried out directly at the surface of the metallographic specimens. These investigations revealed several processes in the structure, namely, precipitation of chromium carbides at the grain boundaries, precipitation of fibrous titanium carbide, precipitation of intermetallic compounds. Interesting recrystallization phenomena were observed if ageing at 800°C extended over a long period. A K-structure was detected by means of differential thermal analysis. During the first period of the precipitation hardening, when the hardness, strength and yield point increase, no change can be detected in the structure even by electron microscopes with a resolution power of about 100 Å. The main hardening effect is attributed to the precipitation of the γ'-phase - $Ni_3(Al,Ti)$. It was found difficult to determine the importance of Ti(C,N) precipitate in the hardening process but no particular role is attributed to it. The hardening process continues during operation and the maximum hardness is achieved sooner or later, depending on the temperature and the titanium content. In addition to the hardness, the strength and

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yield point also increase. At an operating temperature of 650°C the steel under investigation maintains a maximum hardness, strength and yield point without any appreciable change in the elongation and contraction for over 10000 hrs Fig.14 shows the properties of this steel as a function of the annealing time at 650°C. Hardness H_B (top graph), σ, kg/mm^2 (second graph), ψ and δ_{10} in % (third graph), R, mkg/cm^2 (bottom graph), all as functions of the annealing time, hours. Each of the graphs contains information on the solution annealing ("ROZPOUSTĚCÍ ŽÍHANÍ - solution annealing; hod - hours; VODA - water). There is a slight drop in the impact strength, indicating structural changes at this temperature (650°C), i.e. primarily continuing precipitation at the grain boundaries. At higher temperatures over-ageing occurs which results in reduced resistance to strain; at 700°C a drop in hardness occurred after 100 hours. Over-heating, following by precipitation hardening without solution annealing, reduces the service life as compared to material which has not been over-heated. The results lead to the following conclusions:

Structural and mechanical tests indicate that hardening of this steel is primarily due to precipitation of the γ'-phase, the composition of which is $Ni_3(Ti,Al)$. The second intermetallic phase η of the composition Ni_3Ti appears in the structure during the advanced stage of over-ageing and its occurrence does not manifest itself on the curves expressing resistance to deformation. In the early stages of precipitation, particles of fibrous carbide appear, for instance, the carbonitride Ti(C,N) which precipitates primarily in titanium enriched zones. At the grain boundaries local precipitation of the chromium carbide Cr_7C_3 will occur. Tests with over-heated specimens again confirmed the fact that high hardness of hardenable alloys does not guarantee a high resistance to creep. Over-heated specimens, which were again hardened without solution annealing, reached a hardness equal to those of specimens which had been over-heated but their creep strength was low, since, as a result of this process, the solid solution matrix was impoverished of its hardening component. Due to its high structural stability, this steel is suitable for components intended to operate at about 650°C. Acknowledgments are expressed to Engineer P. Schier,
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Metallurgical Institute, ČSAV and to J. Sevčíkova who assisted with the electron microscopy work. There are 16 figures, 1 table and 26 references: 17 Soviet-bloc and 9 non-Soviet-bloc. The four latest English-language references read as follows: A. Taylor, J.Metals 8, 1956, No.10, p.1353; A. Taylor, Ibid, 9, 1957, No.1, p.72; W. Betteridge: The Nimonic Alloys, London, 1959, p.24; H.J. Beattie and F.L. Ver Snyder, Nature 178, 1956, July, p.208.

ASSOCIATION: Státní výzkumný ústav materiálu a technologie, Praha (State Research Institute for Materials and Technology, Prague)

SUBMITTED: November 29, 1960

CIZEK, Lubomir, inz., C.Sc.; JEZEK, Jaroslav, RNDr.; VOBORIL, Josef, inz.

Effect of structural changes on mechanical properties of the hardenable creep-resisting 35Ni-15Cr-3W-Ti,Al steel. Hut listy 16 no.9:637-645 S '61.

1. Statni vyzkumny ustav materialu a technologie, Praha.

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E073/E335

18.1150 1496, 1416

AUTHORS: Vystyd, M., Engineer, Candidate of Sciences and Čížek, L., Engineer, Candidate of Sciences

TITLE: Development of Refractory Alloys for Gas Turbines

PERIODICAL: Strojírenství, 1961, Vol. 11, No. 6, pp. 423 - 432

TEXT: This is a review article dealing with the development of heat-resistant steels. Foreign developments are reviewed in detail in the first part, whilst in the latter part of the article the development of steels in Czechoslovakia is discussed, particularly the discrepancies between the demands of the engineering plants and the immediate potentialities of Czech steel works. During the war years, Germany and the Soviet Union were severely limited as regards raw materials and Soviet research aimed primarily at developing steels with the lowest practicable contents of Ni, Mo, Co and Nb. A number of successful economy steels were developed, for instance, the austenitic steel EI 481 (13% Cr, 8% Mn, 8% Ni, 1.1% Mo, 1.3% V and 0.3% N). The nickel was partly substituted by

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manganese; this steel is superior to the much higher alloyed British steel G 18B and the American steel Timken 16-25-6. Another example is the Soviet steel EI-696 (10% Cr, 20% Ni, 3% Ti, 0.4% Al, 0.015% B) which has properties approaching those of Nimonic 80-type alloys. Nimonic 75-type alloys were also substituted by steels. Most Soviet higher-temperature steels do not contain Co. The Co alloy LK-4 (30% Cr, 3% Ni, 5% Mo, rest Co) was successfully substituted by a Cr-Ni-Fe alloy and the material similar to the American S-816 alloy was substituted by a Co-free nickel alloy. The Soviet alloy steels contain relatively little Mo and Nb and alloying with low quantities of boron is applied. Furthermore, austenitic steels are being substituted by pearlitic or inoculated 12% chromium steels. The Soviet alloy ZhS 6 is a peak achievement for cast alloys, whilst the alloys EI-617 and EI-765 are outstanding alloys for formed parts; the latter is used particularly for stationary gas turbines. Extensive tabulated data are included on materials used outside Czechoslovakia: austenitic steel castings for the most stressed parts of combustion chambers;

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materials used in Great Britain for turbine rotors and discs and for gas-turbine blades. Table 5 gives data of materials used for turbine blades in Great Britain, U.S.A. and the USSR (SSSR) in the forged (tvářený) and as-cast (litý) states. The composition of the individual elements is given in % and the last column lists "other" elements (Fe and B). Development of materials for gas turbines started in Czechoslovakia relatively late. As regards low-alloy and 12% chromium steels the state of development in Czechoslovakia is fully comparable with that of other countries. The position is not as good in the field of austenitic steels but the gap is being bridged by the newly-developed steel Poldi AKRN; the position is most difficult as regards alloys for the highest temperatures, with the exception of the alloys VZÚ-60 and the Poldi AKNC; no Czech-produced alloys are available for operating temperatures of about 750 °C and higher. However, it is anticipated that alloys, the production of which is being developed at SONP Kladno and LZ Pilsen, will make good this deficiency. Table 9 gives the chemical composition (%) of some Czech-produced high-temperature

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steels and alloys ("zbytek" means "remainder"). Table 10 gives the creep strength of some Czech-produced austenitic steels and alloys for the temperatures 550, 600, 650, 700, 750 and 800 °C and for durations of 10^3 - 10^5 hours. Table 11 gives the mechanical properties of some of the Czech-produced austenitic steels and alloys.
There are 4 figures, 11 tables.

ASSOCIATION: SVÚMT, Prague

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Table 5:

			C	Cr	Ni	Mo	W	Co	V	Ti	Al	Nb	Jiné
F. C. B. (T)	Velká Británie	tvářený	0,10	18	12	—	—	—	—	—	—	1,2	—
Hex 326	Velká Británie	tvářený	0,35	17	16	3	—	7	—	—	—	2	—
G 40	Velká Británie	tvářený	0,2	25	20	—	—	—	—	—	—	—	—
G 42 B	Velká Británie	tvářený	0,3	19	15	—	—	25	—	—	—	—	—
Nimonic 80 A	Velká Británie	tvářený	0,08	20	76	—	—	—	—	2,3	1	—	—
Nimonic 90	Velká Británie	tvářený	0,08	20	58	—	—	18	—	2,3	1,4	—	—
Nimonic 95	Velká Británie	tvářený	0,10	20	54	—	—	18	—	3	2	—	—
Nimonic 100	Velká Británie	tvářený	0,25	11	56	5	—	20	—	1,5	5	—	—
19-9 DL	USA	tvářený	0,3	19	10	1,4	1,3	—	—	0,2	—	0,4	—
S 590	USA	tvářený	0,4	20	20	4	4	20	—	—	—	4	—
S 816	USA	tvářený	0,38	20	20	4	4	43	—	—	—	4	—
Inconel X	USA	tvářený	0,03	15	73	—	—	—	—	2,3	0,9	0,8	7 Fe
Waspalloy	USA	tvářený	0,10	20	55	4	—	13	—	2,5	1,2	—	—
M 252	USA	tvářený	0,15	19	52	10	—	10	—	2,5	1	—	—
DCM	USA	litý	0,08	15	(65)	5	8	5 Fe		3,5	4,5		0,08 B
Ni-rotung	USA	litý	0,10	12	(60)			10		4	4	Zr 0,05	0,05 B
HS 21	USA	litý	0,25	27	3	5,5	8	62	—	—	—	—	—
X 40	USA	litý	0,5	25	10			55	—	—	—	—	—
EI 437	SSSR	tvářený	0,08	20	76	—	—	—	—	2,0	0,7	—	—
EI 437 B	SSSR	tvářený	0,08	20	76	—	—	—	—	2,6	0,7	—	0,006 B
EI 612	SSSR	tvářený	0,12	15	35	—	3	—	—	1,3	—	—	—
EI 617	SSSR	tvářený	0,08	15	68	3	7	—	0,3	2	2	—	0,008 B
EI 765	SSSR	tvářený	0,15	15	(70)	4	5	—	—	1,2	1,8	—	0,010 B
EI 826	SSSR	tvářený	0,08	15	(70)	3	7	—	—	2	3	—	B
ZS 3	SSSR	litý	0,16	15	(70)	4	5	—	—	2	3	—	—
LK 4	SSSR	litý	0,25	28	3,5	5,2	—	60	—	—	—	—	—

Great Britain

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Table 9:

	Obsah prvků [%]										
	C	Mn	Si	Cr	Ni	Mo	W	V	Ti	Al	Fe
AKV80 17 341	0,12	0,50	0,50	13,0	12,0	--	1,25	—	0,70	—	zbytek
AKRE	0,12	0,50	0,50	13,0	12,0	1,0	1,25	0,70	0,70	—	zbytek
AKRN	max. 0,12	1,0 2,0	0,25 0,50	14,0 16,0	34,0 38,0	—	2,80 3,20	—	1,20 1,80	--	zbytek
AKC 17 255	0,17	0,5	1,25	24,0	19,0	--	—	—	—	—	zbytek
VZČ-60	max. 0,10			max. 19,0	zbytek	(Mo + W)	max 5 %		max. 1,50	max. 0,80	max. 15,0
AKNC	max. 0,10			20	zbytek	—	—	—	2,8	0,8	max. 5,0
AKND	0,08			20	58	—	—	—	2,3	1,3	16 Co
AKNW	0,12			15	zbytek	4	5	—	1,2	2,0	—

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Table 10:

	Teplota [°C]																	
	550			600			650			700			750			800		
	Čas [h]																	
	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5	10^3	10^4	10^5
AKVSB 17 341	25	19	13	19	13	8,5	13	8,5	6	—	6							
AKRE				min. 25	min. 17		min. 20	min. 13										
AKRN				40	30	—	28	20	—	17	13	—						
VZÚ 60	26	22	18	23	18	13,5	19	14	9,5	14	9,5	5,5						
AKNC										25	15	—	17	12	—	10	4	—
AKND												—	26	14	—	18	9	—
AKNW										38	29	—	30	25	—	18	11,5	—

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Table 11:

	$\sigma_{0.2}$ [kg/mm²]	σ_{Pl} [kg/mm²]	δ_5 [%]	ψ [%]	R [mkg/cm²]
AKVSB 17 341	30	60	45	68	18
AKRE	min. 23	55—70	min. 35	min. 45	min. 15
AKRN	54	92	20	45	9,5
AKO 17255	35	70	30	50	15
VZÚ-60	25	52	30	27	6,5
AKNO	63	100	35	47	4,6
AKND	82	130	25	20	—
AKNW	82	120	26	35	—

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CZECH, L.

PHASE I BOOK EXPLOITATION JUN 25 2/3284 4/2

Jerie, Jan, ed., Engineer, Doctor, Corresponding Member of the Czechoslovak Academy of Sciences

Základní problémy ve stavbě spalovacích turbin (Basic Problems in the Construction of Gas Turbines [collection of articles]). Prague, Nakl. ČAV, 1962. 627 p. 1600 copies printed.

Sponsoring Agency: Československá akademie věd.

Ed. of Publishing House: Marie Mornvcová; Tech. Ed.: František Končický.

PURPOSE: The book is intended to familiarize turbine designers with recent developments in the design of gas turbines and to present some research results which may be helpful in designing more efficient turbines.

COVERAGE: The book comprises articles by leading Czechoslovak turbine experts on thermodynamic cycles, flow research in turbine components,

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Basic Problems in the Construction (Cont.)

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E073/E535

AUTHORS: Čížek, L., Vodsedálek, J., Váša, Č. et al.

TITLE: Heat-resistant hardenable steel 15Cr35NiTi

PERIODICAL: Hutnické listy, no.1, 1962, 62

TEXT: On current 5 ton heats of the steel AKRN the basic properties which are important from the point of view of utilisingit in steem and gas turbines were determined, namely the mechanical and physical properties, the creep strength and creep rate, resistance to relaxation, the resistance to fatigue at elevated temperatures, the resistance to thermal shock, resistance to oxidation in air, to erosion by steam and corrosion in some aggressive solutions. The internal damping under conditions of fatigue and creep were investigated paying particular attention to heat treatment which is optimum from the point of view of creep and fatigue. An analysis was made of the structural phenomena which take place during heat treatment and ageing of the steel AKRN in the shaped and in the as-cast states.
Research Report SVÚMT Z-60-847.
211 pages, 157 figures and diagrams, 52 tables.
Card 1/1 [Abstractor's note. Complete translation.]

CIZEK, L.

Testing hardness and strength of timber in building structures without damaging it. p. 459.

INZENYRSKE STAVBY. Praha, Czechoslovakia. Vol. 3, no. 11, Nov. 1955.

Monthly list East European Accessions (EPAI) LC. Vol. 9, no. 2, Feb. 1960
Uncl.

CIZEK, L.

New methods for calculating articulated wooden struts. In German. p. 109. (ACTA TECHNICA, Vol. 1, No. 2, 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC, Vol. 6, No. 12, Dec 1957. Unc..

CIZEK, Ludvik, dr., inz.

"Wood constructions" by Karlsen. Reviewed by Ludvik Cizek.
Drevo 18 no. 12: 469 D '63.

CIZEK, Ludvik, dr., inz.

"Examples of the calculation of wood structures" by [doc., dr., inz.] Zygmund Golebiowski. Reviewed by Ludvik Cizek. Drevo 17 no.9:288 S '62.

CIZEK, O.

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application, Part 2. - Ceramics, Glass, Binders, Concretes. - Ceramics. H-12b

Abs Jour : Ref Zhur - Khimiya, No 7, 1958, 22090

Author : K. Funk, O. Cizek
Inst : -
Title : Influence of Shard Introduction into China Masses on Results of Their Rational Analysis by Berdel's Method.

Orig Pub : Sklar a keramik, 1957, 7, No 10, 295-296

Abstract : Great divergences from the actual composition of masses are observed at laboratories of china-ware factories in Czechoslavakia at the rational analysis (RA) of china masses according to the Berdel's method (Sklar a keramik, 1952, No 9, 168). The cause of the inaccurate results of the PA is the introduction of the utility waste shards and, especially, of the highly burnt china shards into the masses. The amount of felspar determined according to the

Card 1/2

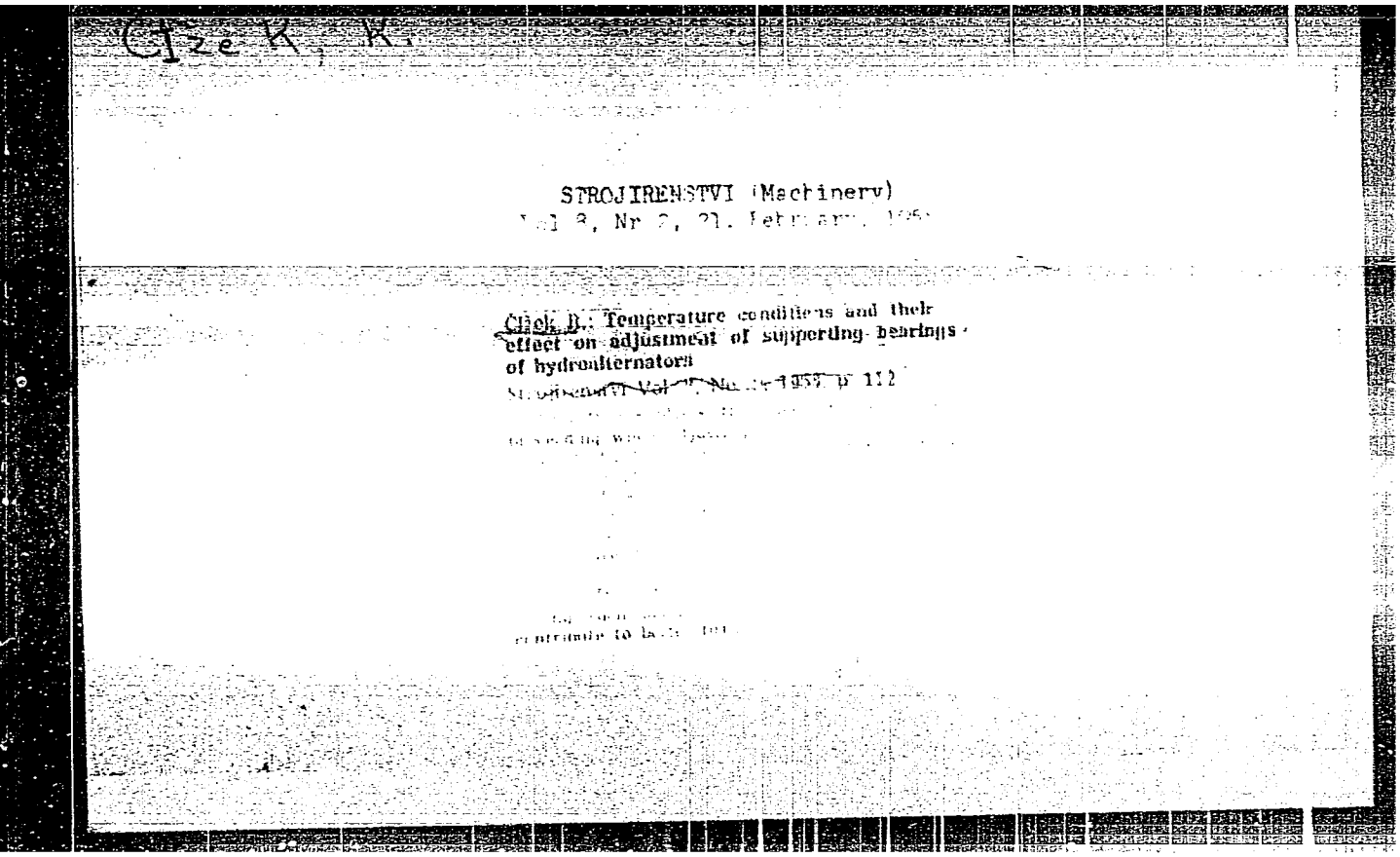
CIZEK, O.

SCIENCE

Periodicals : GEODETICKY A KARTOGRAFICKY OBZOR. Vol. 5, no. 1, Jan. 1959

CIZEK, O. Fove years of work of the Regional Institute of Geodesy and Cartography in Liberec. p. 3.

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 5
May 1959, Unclass.



STROJIRENSTVI (Machinery)
Vol 8, Nr 2, 21. February [illegible]

Cisek, B.: Temperature conditions and their effect on adjustment of supporting bearings of hydroalternators
Strojirenstvi Vol [illegible] No [illegible] 1958 p 112

CIZEK, R.

"Organization and operation of high-voltage laboratory in Bechovice."

ELEKTROTECHNIK, Praha, Czechoslovakia, Vol. 14, No. 4, April 1959.

Monthly List of East European Accessions (EEMI), LC, Vol. 8, No. 9, September 1959.

Unclassified.

CIZEK, R.

Development of tests of electric equiptment by means of high voltage. p. 536.

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Praha, Czechoslovakia, Vol. 48, No. 10, Oct. 1959.

Monthly List Of East European Accession, (EEAI), LC, Vol. 8, No. 12, Dec. 1959.
Uncl.

CIZEK, Roman, kandidat technickych ved

Theoretical and experimental verification of the accuracy of oscillographic surge voltage measurement. El tech obzor 51 no.4:173-179 Ap '62.

1. Vyzkumny ustav energeticky, Bechovice.

CIZEK, Roman, inz.

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CIZEK, R., inz.

Continuous measurement of voltage distribution on a polluted insulator string. El tech obzor 52 no.12:668 D '63.

CIZEK, Roman, inz.

Industrial safety in working on high-voltage lines under operation. El tech obsor 52 no.5:259-261 My '63.

1. Laborator velmi vysokeho napeti, Energeticky ustav.

CIZEK, Roman, inz., kandidat technickych ved

Influence of atmospheric conditions on the magnitude of flashover voltage in air. El tech obzor 52 no.7:355-361 Jl '63.

1. Laborator velmi vysokeho napeti, Vyzkumny ustav energeticky.

CIZEK, R., inz. CSc.

Influence of screened cables on the measurement of shock phenomena. Bul Egu no. 5:28-32 '63.

CIZEK, Roman, inz. CSc.; KOHOUTOVA, Dana, inz.

Influence of humidity on the surge flash-over voltages of wide air gaps. El tech obzor 53 no.7:380-385 Jl'64

1. Research Institute of Power Engineering.

L 5402-65
ACCESSION NR: AP5016819 CZ/0017/64/053/011/0594/0598

AUTHOR: Cizek, Roman (Engineer, Candidate of sciences); Kohoutova, Dana(Engineer)

TITLE: Technical utilization of the ultracorona phenomenon

SOURCE: Elektrotechnicky obzor, v. 53, no. 11, 1964, 594-598

TOPIC TAGS: electric engineering, electrode, electric corona

ABSTRACT: Reported are results of experiments concerning the use of the ultracorona phenomenon within a gap range from 50 to 250 millimeters. Measured values are discussed and the gain of spark-over voltage is compared with that which is obtained by increasing the radius of the electrode curve. The conclusion is made that the use of ultracorona electrodes is not advantageous nor technically justified for gaps up to 250 millimeters. Orig. art. has: 1 figure, 7 graphs.

ASSOCIATION: Vyzkumny ustav energeticky (Power Research Institute)
SUBMITTED: 25May64 ENCL: 0 SUB CODE: EM, EE
NO REF SOV: 000 OTHER: 005 JPRS

Card 1/1

CIZAK, Roman, Inn.

Electrostatic pick-up of power from high voltage lines. A
tech obzor 54 no.1:41-42 Ja '65.

PECAK, V.; CIZEK, S.; MUSIL, J.; CERKES, L.; HEROLD, M.; BELIK, E.; HOFFMAN, J.

Stimulation of chlortetracycline production by benzyl thiocyanate. J. Hyg. Epidem., Praha 2 no.1:111-115 1958.

1. Institute of Antibiotic Research, Roztoky, near Prague, Czechoslovakia.
(THIOCYANATES, effects
benzyl thiocyanate stimulation of chlortetracycline prod. by Streptomyces strains)
(CHLORTETRACYCLINE, preparation of
prod. by Streptomyces strains, stimulation by benzyl thiocyanate admin.)
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aureofaciens prod. of chlortetracycline, stimulation by benzyl thiocyanate admin.)

CIZEK, V.

Production of activized cinder concrete. p. 234.
STAVIVO, Praha, Vol. 33, no. 7, July 1955.

SO: Monthly List of East European Accessions, (EEAL), LC, Vol. 4, no. 10, Oct. 1955, Uncl.

CIZEK, V.

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p. 223 (Automobil) Vol. 1, NO. 7, July 1957, Praha, Czechoslovakia

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CIZEK, V.

New method of application of acrylic prostheses in arthroplasties. Acta. chir. orthop. traum. cech. 19 no.4-8:126-130 1952. (CIML 23:2)

1. Of the Clinic of Orthopedics and Children's Surgery (Head--Prof. J. Zahradnicek, M.D.) of Charles University, Prague.

CIZEK V

CHIZHEK, Vatslav [Čižek, V.], doktor (Prega)

Professor Dr. Jan Zahradníček, founder of surgery of the locomotor apparatus in Czechoslovakia. Ortop.travm. i protez. 18 no.6:57-58 N-D '57. (MIRA 11:4)

(ZAHRADNICEK, JAN, 1887-)

CIZEK, V. Dr.

LOMICEK, M., Dr.; CIZEK, V., Dr.

Malignant bone tumors. Acta chir. orthop. traum. cech. 24 no.3:225-231 May 57.

1. I. Klinika pro orthopedickou a detskou chirurgii KU v Praze, prednosta prof. Dr. J. Zahradnicek.
(BONES, neoplasms
malignant forms (Cz))

CIZIK, Irena.

Members of foreign trade unions tell about Poland. Pol'.prof.oboz. no.1:31-35 '54. (MLRA 7:6)
(Poland--Trade unions--Congresses) (Trade unions--Congresses--Poland) (Poland--Economic conditions)

CIZIKOVA, E., promovany matematik

"The theory of relativity" by B.G.Kuznecov. Reviewed by E. Cizikova. Tech praca 14 no.6:465 Je '62.

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New modification of clinical micro-analysis of body proteins; filter paper partition electrophoresis. Cas. lek. cesk. 92 no.23:624-63[illegible] 5 June 1953. (CLML 24:5)

1. Of the Department of Biochemistry (Head--J. Opplt, M.D.) of Prague State Faculty Hospital.

GIZDSKY, B.

Ultrarapid centrifuge. Cas. lek. cesk. 93 no.1:10-13 8 Jan 1953. (CIML 25:5)

1. Of the Hygienic Department of Charles University, Prague.
2. Apparatus.

ČIŽINSKÝ, B.

Influence of ultracentrifugation of blood serums on the polarographic reaction of their deproteinated solutions. S. Turek and B. Čižinský (Charles Univ., Prague). *Československ. Onkologie* 2, 335–50(1955); cf. R. Brdička, *Research* 1, 27(1947).—Ultracentrifugation (I) of blood serum at [illegible] r.p.m. (field 160,000 g) enables a more quant[illegible] of the polarographically active substances of lower mol. wt. Use of I marks a new method of polarographic examn. of serums eliminating considerably the possibilities of the results being influenced by prepn. procedures. I of native blood serums does not cause uncovering of polarographically active groups of protein substances, however, it influences, especially in some pathol. cases, the results of colloid and serological reactions of the serum. Mechanism is discussed of the effects of I in combination with terminal sulfosalicylic acid and alk. denaturation of proteins.

L. J. Urbánek

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KOLOUSEK, J.; JIRACEK, V.; CIZINSKY, B.

Use of an air driven ultracentrifuge for the study of free amino acids, peptides, amides and free ammonia in the brain and liver. Sborn. lek. 66 no.6:171-177 Je'64

1. Biofyzikalni ustav fakulty vseobecneho larkstwi University Karlovy v Praze (prednosta: doc. dr. Z.Dienstbier, DrSc.); Biochemicky ustav prirodovedecke fakulty University Karlovy v Praze a Lekarska fakluta hygienicka University Karlovy v Praze.

PIHRT, J.; NAUS, A.; MISAK, J.; CIZINSKY, B.

Adjustment of the microclimate with aerosols after laryngectomy.
Cesk. otolaryng. 12 no.1:38-44 F '63.

1. ORL klinika lekarske fakulty hygienicke KU v Praze, prednosta prof. dr. Vl. Hlavacek.— Oddeleni prevence chorob z povolani lekarske fakulty hygienicke KU v Praze, prednosta dr. A. Naus. — Oddeleni biochemie lekarske fakulty hygienicke KU v Praze, prednosta dr. J. Opplt.— Ustredni dilny lekarske fakulty hygienicke KU v Praze, vedouci B. Cizinsky.
(LARYNGECTOMY) (AEROSOLS) (AIR)

CIZINSKY, Zdenek

Conference of experts on the production and use of the phosphoric acid and phosphoric salts. Chem prum 12 no.11:617 N '62.

1. Ministerstvo chemickeho prumyslu.

CERNY, Miroslav, dr.; CIZINSKY, Zdenek, inz.

Brief report on the Chemical Conference in Ostrava, 1961. Chem prum 11 no.11:589-591 N '61.

1. Ministerstvo chemickeho prumyslu.

SKALICKY, J. Technicka spoluprace: CIZKOVA, A.

Hygienic meaning and season changes in the occurence of coliform microbes in drinking waters. Cesk. hyg. 9 no.4:216-222 My'64

1. Vojensky ustav hygieny, epidemiologie a mikrobiologie, Praha.

SKALICKY, J.; NOVOTNA, H. Techn. spoluprace: CIZKOVA, A.; VAVROVA, V.

Water disinfection with peroxides. Cesk. hyg. 10 no.2:100-106 Mr '65.

1. Vojensky ustav hygieny epidemiologie a mikrobiologie, Praha.

SKALICKY, J. Technicka spoluprace: CIZKOVA, A.; JURCOVA, H.; Vavrova, A.

The possibility of use of the test of heat resistance of microbes in the microbiologic investigation of waters.
Cesk. hyg. 9 no.10:617-623 D '64.

1. Vojensky ustav hygieny, epidemiologie a mikrobiologie, Praha.

CIZKOVA, J.; VLACH, V.

The clinical picture of neuroendocrine relationships. Cesk. pediat. 20 no.6:462-466 Ja'65.

1. Detska klinika lekarske fakulty hygienicke Karlovy University v Praze (Prednostka: prof. dr. J. Cizkova-Pisarovicova, DrSc.) a Neurologicka Katedra UDL v Praze (vedouci: prof. dr. Z. Macek, CSc.).

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1819. CÍŽKOVÁ-PÍSAŘOVICOVÁ J. and VESELÝ K. Odd. dět. a odd. nem. žen. a det. gyn., Poliklin. Karlovy Univ., Praha. "Pubertas praecox exogenea arteficialis u děvčátek. Varorné kasuistické sdělení. Exogenous artificial pubertas praecox in girls (a warning casuistic communication) PRAKT. LÉK. 1954, 34/15-16 (361-363) Tables 1 Illus. 2

Previous treatment of 7 children with oestrogens in ointment is considered to be the cause. Special emphasis is laid on the danger of the use of these ointments.

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Thyreddectomy in children & adolescents. Cas. lek. cesk. 96 no.33-34: 1032-1037 23 Aug 57.

1. Chirurgicka klinika, prednosta prof. MUDr E. Polak a detska klinika LFHKU, SFN Praha XII, prednosta prof. MUDr J. Cizkova-Pisarovicova. J. C.-P., Praha 12, Srobarova 48.

(THYROID GLAND, surg.
in child. & adolescents (statist. comparison (Cz))
(ADOLESCENCE,
thyroidectomy in adolescents & child. statist. comparison (Cz))

CIZKOVA-PISAROVICOVA, J., Prof.;PROKOPEC, M. Dr. Sc.;VANECKOVA, M.

Contribution to the physiology and pathology of menstrual bleeding in young girls. Cesk. gyn. 25[39] no.1/2:52-62 Mr '60.

1. Detska klinika, prednosta prof. dr. J. Cizkova-Pisarovicova, odd. hyg. deti a dorostu, prednosta doc. dr. Fr. Janda, LFHKU v Praze 12 a Ustav hygieny, prednosta doc. dr. K. Symon.
(MENSTRUATION)
(PUBERTY)

CIZKOVA-PISAROVICOVA, Jirina; RYSKOVA, Milada

Asthma bronchiale and puberty. Cesk.pediat.15 no.6/7:639-644 Jl'60.

1. Detska klinika lekarske fakulty hygienicke KU, prednosta prof.MUDr. J.Cizkova-Pisarovicova.
(ASTHMA in adolescence)
(PUBERTY compl)

CIZKOVA-PISAROVICOVA, J.

Clinical experience on the effect of internal secretion on the skeletal system. Cesk. rentg. 15 no.6:359-369 '61.

1. Katedra detskeho lekarstvi lekarske fakulty hygienicke KU.
(ENDOCRINE GLANDS physiol.)
(BONE AND BONES anat. & histol.)

CIZKOVA-PISAROVICOVA, Jirina; ULRYCHOVA, Marie; RUZICKA, Ladislav

Effect of child and adolescent sera on plant growth. Cesk. pediat. 16 no.5:387-391 My '61.

1. Detska klinika lekarske fakulty hygienicke KU, prednosta prof. MUDr. J. Cizkova-Pisarovicova, Dr. Sc. Biologicky ustav, fytopatologie CSAV, prednosta akademik C. Blatny Katedra zdravotnictvi LFH KU, prednosta prof. MUDr. Fr. Blaha.

(BLOOD) (PLANTS) (GROWTH)

CIZKOVA-PISAROVICOVA, J.

SURNAME, Given Names

(1)

Country: Czechoslovakia

Academic Degrees: Prof, MD

Affiliation: Director of Pediatric Clinic of the Faculty of Medical Hygiene, KU /Karlova universita; Charles University/ (Detska klinika lekarske fakulty hygienicke KU), Prague.

Source: Prague, Prakticky Lekar, Vol 41, No 12, 1961, pp 552-55?.

Data: "Adolescence Medicine at the Faculty of Medical Hygiene of Charles University, Prague."

1/2

CIZKOVA-PISAROVICOVA, Jirina; PADOVEC, Jaroslav; SKAMENOVA, Bedriska; STOLZ, Josef

Fetal development in a hypothyroid mother. Cas.lek.cesk 100 no.24/25: 751-754 23 My '61.

1. Detska klinika LFH KU v Praze, prednosta prof. Dr. Sc. MUDr. J. Cizkova-Pisarovicova. Gynekologicka klinika LFH KU v Praze, prednosta doc. dr. J. Padovec. II. interni klinika LFH KU v Praze, prednosta prof. Dr. Sc. MUDr. Jiri Syllaba. Ustav pataologicke anatomie LFH KU v Praze, prednosta doc. dr. Josef Stolz.

(HYPOTHYROIDISM in pregn) (PREGNANCY compl)
ABNORMALITIES etiol)

CIZKOVA, Jirina

Hyperfunction of thyroid gland of mother in relation to the child. Endodr. pol. 13 no.1:63-65 '62.

1. Department of pediatrics, Hygiene Faculty of the University of Charles IV in Prague Director: Prof. Dr Sc. MUDr. Jirina Cizkova-Pisarovicova.

(HYPERTHYROIDISM in pregn) (PREGNANCY compl)
(INFANT NEWBORN dis)

CIZKOVA-PISAROVICOVA, Jirina

Inflammations of the thyroid gland in children and adolescents. Cesk. pediat. 17 no.3:213-215 Mr '62.

1. Detska klinika LFH KU, prednosta prof. MUDr. Jirina Cizkova-Pisarovicova, DrSc.

(THYROIDITIS)

CIZKOVA-PISAROVICOVA, J.

2

CZECHOSLOVAKIA

CIZKOVA-PISAROVICOVA, J., MD., Dr. Sc; ULRYCHOVA, M; RUZICKA, L.

1. Children's Clinic LFH KU (Detska klinika LFH KU); 2. Institute of Experimental Botany CSAV (Ustav experimentalni botaniky CSAV); 3. Chair of Sanitation (Katedra zdravotnictvi), Brno

Prague
~~Brno~~, Vnitrni lekarstvi, No 8, 1963, pp 739-742

"Growth Inhibition in Thyroid Gland Disorders."

CIZKOVA-PISAROVICOVA, J.

80th birthday of Professor Jiri Brdlik and our pediatics. Cas. lek. cesk. 102 no.42:1166-1168 18 O '63.

CIZMAN, V.

"Preparations for work" by F. Pristl. Pt.1. Reviewed by V. Cizman.
Stroj vest 8 no.4/5:118 O '62.

CIZMAN, V.

"Textbook for technologists" by C. Böhme, H. I. Borghardt and A. Kirberg. 2d ed. Reviewed by V. Cizman. Stroj vest 8 no.3:[illegible] Je '62.

CIZMAR, I.

"Experiences from cable-laying in canals, tunnels, or other cable conduits."

p. 139(Energetika, Vol. 8, no. 4, Apr. 1958, Praha, Czechoslovakia)

Monthly Index of East European Accessions (EEAI) LC, Vol. 8, no. 9, September 1958

BRADA, J., inz.; CIZMAR, I., inz.

Problem of lighting in acetylene production plants. Elektrotechnik 17 no.6:176 Je '62.

CIZMAR, Ivan, inz.

Protection against the danger of contact tension in the enterprise "Vychodoslovenske zelezarny" and our regulations. Energetika Cz 12 no.8:411-412 Ag '62.

1. Ustav technickeho dozoru, Praha.

CIZMAR, Jozef

Improvement of working conditions of switchboard operators. Cz spoje 6 no.12:26 D '61.

1. SDS Bratislava.

TOPOLSKY, L.; URGEOVA, N.; CIZMAR, J.

Corticotherapy of tuberculosis of internal female genitalia. Cesk. gynek. 27/41 no.8:618-623 '62.

1. Liecebna pre tuberkulozu Vyane Hagy, riaditel MUDr. J. Balaz — Liecebna pre tuberkulozu Novy Smokovec, riaditel MUDr. A. Krcmavy — Gyn.-por. oddeleni OUNZ Poprad, prednosta MUDr. L. Topolsky.
(TUBERCULOSIS FEMALE GENITAL) (ADRENAL CORTEX HORMONES)

CIZMAR, Jan (Bratislava)

Professor Jan Srb; obituary. Mat fyz cas SAV 14 no.3:
252-254 '64.

L 3110-66 EWP(t)/EWP(b) IJP(c) JD

ACCESSION NR: AP5026890 Cz/0034/65/000/006/0450/0450

AUTHOR: Cizmarik, P. (Engineer)

TITLE: Ferrochrome production method

SOURCE: Hutnicke listy, no. 6, 1965, 450

TOPIC TAGS: ferrochrome, calcination, arc furnace, metal melting

ABSTRACT: The article is an abstract of Czechoslovak Patent Application Class 18b 5/52, PV 2712-64, dated 11 May 64. The invention describes production of ferrochrome by silicothermic method in an electric arc furnace. The content of C is reduced to below 0.06 w. % by chrome ore that has been calcined at 700 - 1100°C. The content of C in the solid form, or as carbonates is reduced by subjecting the chrome ore to calcination. The ore treated in the described manner may be added to the charge in standard production of ferrochrome in an electric arc furnace. The sensible heat in the ore reduces the time required for melting.

ASSOCIATION: none

SUBMITTED: 11May64 ENCL: 00 SUB CODE: MM, IE

NR REF SOV: 000 OTHER: 000 JPRS

Card 1/1

CIRNAS, D.

Official part. Metrologia apl 6 no.2:91 Ap-Je '59.

1. Director General, Directia Generala pentru Energie, Metrologie, Standarde si Inventii, Oficiul de Stat pentru Energie.

CIZMAS, D.

Official part. Metrologia apl 8 no.1:42-46 Ja-Mr '61.

1. Director General al Directiei Generale pentru Energie, Metrologie, Standarde si Inventii.

CIZMAS, D.

Orders No. 365, 366, 352. Metrologia apl 9 no.5:237 S-O '62.

1. Director General al Directiei Generale pentru Metrologie, Standarde si Inventii.

CIZMAS, D.

Official part; extract. Metrologia apl 10 no.3:140 Mr '63.

1. Director General, Directia Generala pentru Metrologie, Standarde si Inventii.

CIZMAS, D.

Official part. Metrologia apl 10 no.6:278-279 Je '63.

1. Director general, Directia Generala pentru Metrologie, Standarde si Inventii.

CIZMAS, D.

Official part. Metrologia apl 11 no. 1: 34-44 Ja '64.

CIZMAS, D.

Official part. Metrologia apl 11 no. 3:136-137 Mr'64

1. General Director, General Department of Metrology, Standards and Inventions.

CIZMESINSKIN, Marija, ing. (Zagreb)

Ultrasound and its application in welding technology.
Zavarivanje 3 no.3:52-59 Mr '60

1. Strojarsko-brodogradevni fakultet Sveucilista u Zagrebu, Zagreb.

CIZMESINSKIN, Marijā, ing. (Zagreb)

Description of work with reference blocks for gauging and the control of ultrasonic equipment. Zavarivanje 3 no.6:113-118 Je '60.

1. Strojarsko-brodogradevni fakultet Sveucilista u Zagrebu, Zagreb.

CIZMESINKIN, Marija, ing. (Zagreb)

Internal stress relief by induction heating. Zavarivanje 3 no.7/8:134-136. S-O '60.

1. Strojarsko-brodogradevni fakultet Sveucilista u Zagrebu, Zagreb; clan Redakcionog kolegija, "Zavarivanje".